Network Working Group
Request for Comments: 820

J. Postel
J. Vernon
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Obsoletes RFCs: 790, 776, 770, 762,
758, 755, 750, 739, 604, 503, 433, 349
Obsoletes IENs: 127, 117, 93

ASSIGNED NUMBERS

This Network Working Group Request for Comments documents the currently assigned values from several series of numbers used in network protocol implementations. This RFC will be updated periodically, and in any case current information can be obtained from Jon Postel. The assignment of numbers is also handled by Jon, subject to the agreement between DARPA/IPTO and DDN/PMO about number allocation, documented in Appendix A of this RFC. If you are developing a protocol or application that will require the use of a link, socket, port, protocol, or network number please contact Jon to receive a number assignment.

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The ARPANET community is making the transition form the ARPANET to the ARPA Internet. This has been characterized as the NCP/TCP transition [63], although many other the protocols are involved, too. The working documents for the new Internet environment have been collected by the Network Information Center (NIC) in a book entitled the "Internet Protocol Transition Workbook" [62].

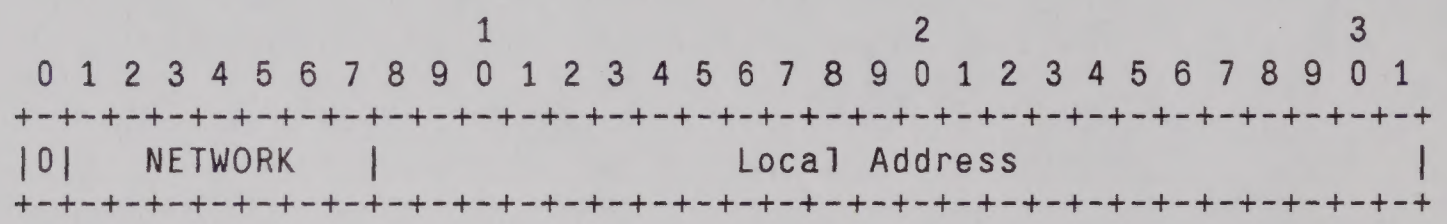
Most of the protocols mentioned here are documented in the RFC series of notes. The more prominent and more generally used are documented in the "Internet Protocol Transition Workbook" or in the old "Protocol Handbook" [17] prepared by the NIC. Some of the items listed are undocumented.

In all cases the name and mailbox of the responsible individual is indicated. In the lists that follow, a bracketed entry, e.g., [17,iii], at the right hand margin of the page indicates a reference for the listed protocol, where the number cites the document and the "iii" cites the person.

ASSIGNED NETWORK NUMBERS

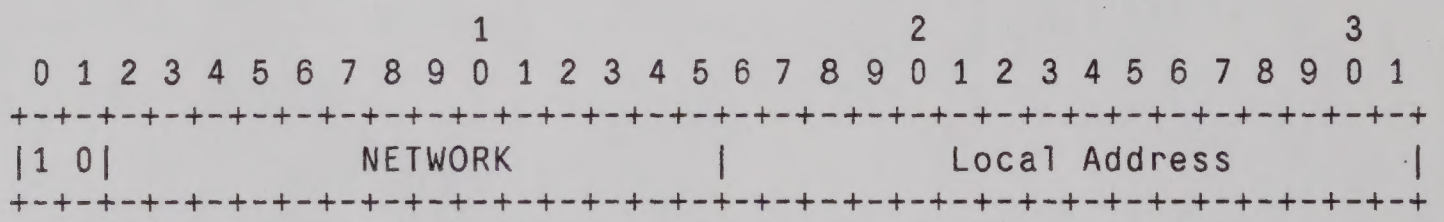
The network numbers listed here are used as internet addresses by the Internet Protocol (IP) [33,62]. The IP uses a 32-bit address field and divides that address into a network part and a "rest" or local address part. The division takes 3 forms or classes.

The first type of address, or class A, has a 7-bit network number and a 24-bit local address. The highest-order bit is set to 0. This allows 128 class A networks.



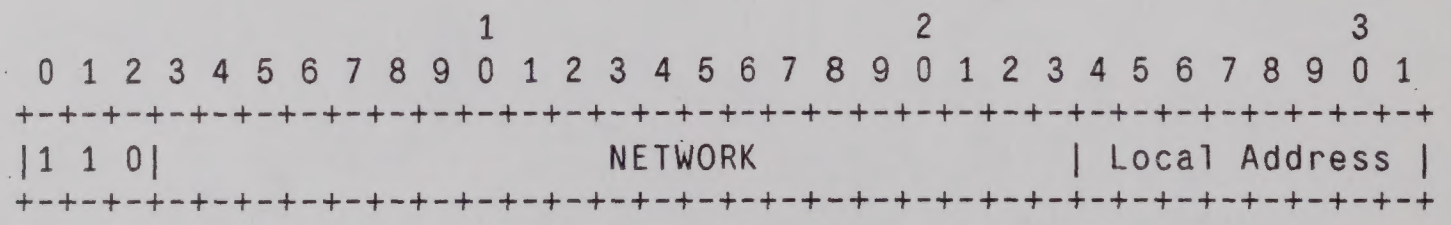
Class A Address

The second type of address, class B, has a 14-bit network number and a 16-bit local address. The two highest-order bits are set to 1-0. This allows 16,384 class B networks.



Class B Address

The third type of address, class C, has a 21-bit network number and a 8-bit local address. The three highest-order bits are set to 1-0-0. This allows 2,097,152 class C networks.



Class C Address

One commonly used notation for internet host addresses divides the 32-bit address into four 8-bit fields and specifies the value of each field as a decimal number with the fields separated by periods. This is called the "dotted decimal" notation. For example, the internet address of ISIF in dotted decimal is 010.002.000.052, or 10.2.0.52.

Network Numbers

The dotted decimal notation will be used in the listing of assigned network numbers. The class A networks will have nnn.rrr.rrr.rrr, the class B networks will have nnn.nnn.rrr.rrr, and the class C networks will have nnn.nnn.nnn.rrr, where nnn represents part or all of a network number and rrr represents part or all of a local address or rest field.

For various reasons, the assigned numbers of networks are sometimes changed. To ease the transition the old number will be listed as well. These "old number" entries will be marked with a "T" following the number and preceeding the name.

To reflect the allocation of network identifiers among various categories (see Appendix A), a one-character code is placed to the left of the network number (in the column marked by an asterisk): R for Research and Development, D for DoD, and C for Commercial.

Assigned Network Numbers

Class A Networks

*	Internet Address		Name	Network	References
	000.rrr.rrr.rrr			Reserved	[JBP]
R	001.rrr.rrr.rrr	T	BBN-PR	BBN Packet Radio Network	[JAW3]
R	002.rrr.rrr.rrr	T	SF-PR-1	SF-1 Packet Radio Network	[JEM]
R	003.rrr.rrr.rrr		RCC-NET	BBN RCC Network	[JGH]
R	004.rrr.rrr.rrr		SATNET	Atlantic Satellite Network	[DM11]
D	005.rrr.rrr.rrr	T	DEMO-PR-1	Demo-1 Packet Radio Network	[LCS]
R	006.rrr.rrr.rrr	T	SF-PR-2	SF-2 Packet Radio Network	[JEM]
	007.rrr.rrr.rrr			Unassigned	[JBP]
R	008.rrr.rrr.rrr		BBN-NET	BBN Network	[JGH]
D	009.rrr.rrr.rrr	T	BRAGG-PR	Ft. Bragg Packet Radio Net	[JEM]
R	010.rrr.rrr.rrr		ARPANET	ARPANET	[17,1,REK2]
R	011.rrr.rrr.rrr	T	UCLNET	University College London	[PK]
	012.rrr.rrr.rrr			Unassigned	[JBP]
	013.rrr.rrr.rrr			Unassigned	[JBP]
C	014.rrr.rrr.rrr		PDN	Public Data Network	[REK2]
	015.rrr.rrr.rrr			Unassigned	[JBP]
	016.rrr.rrr.rrr			Unassigned	[JBP]
	017.rrr.rrr.rrr			Unassigned	[JBP]
R	018.rrr.rrr.rrr		MIT	MIT Network	[10,43,NC3]
	019.rrr.rrr.rrr			Unassigned	[JBP]
	020.rrr.rrr.rrr			Unassigned	[JBP]
D	021.rrr.rrr.rrr		EDN	DCEC EDN	[EC5]
	022.rrr.rrr.rrr			Unassigned	[JBP]
R	023.rrr.rrr.rrr		MITRE	MITRE Cablenet	[44,APS]
	024.rrr.rrr.rrr			Unassigned	[JBP]

R	025.rrr.rrr.rrr	RSRE-PPSN	RSRE / PPSN	[NM]
D	026.rrr.rrr.rrr	MILNET	MILNET	[HH6]
R	027.rrr.rrr.rrr	NOSC-LCCN	NOSC / LCCN	[KTP]
R	028.rrr.rrr.rrr	WIDEBAND	Wide Band Satellite Net	[CJW2]
	029.rrr.rrr.rrr		Unassigned	[JBP]
R	030.rrr.rrr.rrr	DCN-UCL	UCL DCNET	[PK]
	031.rrr.rrr.rrr		Unassigned	[JBP]
R	032.rrr.rrr.rrr	UCL-TAC	UCL TAC	[PK]
	033.rrr.rrr.rrr		Unassigned	[JBP]
	034.rrr.rrr.rrr		Unassigned	[JBP]
R	035.rrr.rrr.rrr	RSRE-NULL	RSRE Null Network	[NM]
R	036.rrr.rrr.rrr T	SU-NET	Stanford University Network	[JCM]
	037.rrr.rrr.rrr		Unassigned	[JBP]
	038.rrr.rrr.rrr		Unassigned	[JBP]
R	039.rrr.rrr.rrr	SRINET	SRI Local Network	[GEOF]
	040.rrr.rrr.rrr		Unassigned	[JBP]
R	041.rrr.rrr.rrr	BBN-LN-TEST	BBN Local Network Testbed	[KTP]
	042.rrr.rrr.rrr		Unassigned	[JBP]
	043.rrr.rrr.rrr		Unassigned	[JBP]
R	044.rrr.rrr.rrr	AMPRNET	Amateur Radio Experiment Net	[HM]
R	045.rrr.rrr.rrr T	C3-PR	Testbed Development PRNET	[BG5]
R	046.rrr.rrr.rrr	UCB-ETHER	UC Berkeley Ethernet	[SXL]
R	047.rrr.rrr.rrr T	SAC-PR	SAC Packet Radio Network	[BG5]
R	048.rrr.rrr.rrr	NDRE-TIU	NDRE-TIU	[PS3]
	049.rrr.rrr.rrr		Unassigned	[JBP]
R	050.rrr.rrr.rrr	NDRE-RING	NDRE-RING	[PS3]
	051.rrr.rrr.rrr		Unassigned	[JBP]
R	052.rrr.rrr.rrr T	ROCKWELL-PR	Rockwell Packet Radio Net	[EHP]
	053.rrr.rrr.rrr-126.rrr.rrr.rrr		Unassigned	[JBP]
	127.rrr.rrr.rrr		Reserved	[JBP]

Class B Networks

*	Internet Address	Name	Network	References
	128.000.rrr.rrr		Reserved	[JBP]
R	128.001.rrr.rrr	BBN-TEST-B	BBN-GATE-TEST-B	[RH6]
R	128.002.rrr.rrr	CMU-NET	CMU-Ethernet	[HDW2]
R	128.003.rrr.rrr	LBL-CSAM	LBL-CSAM-RESEARCH	[MO1]
R	128.004.rrr.rrr	DCNET	LINKABIT DCNET	[DLM1]
R	128.005.rrr.rrr	FORDNET	FORD DCNET	[DLM1]
R	128.006.rrr.rrr	RUTGERS	RUTGERS	[CLH3]
R	128.007.rrr.rrr	DFVLR	DFVLR DCNET Network	[HDC1]
R	128.008.rrr.rrr	UMDNET	Univ of Maryland DCNET	[DLM1]
R	128.009.rrr.rrr	ISI-NET	ISI Local Network	[CMR]
R	128.010.rrr.rrr	PURDUE-CS	Purdue Computer Science	[CXK]
R	128.011.rrr.rrr	BBN-CRONUS	BBN DOS Project	[12,WIM]
R	128.012.rrr.rrr	SU-NET	Stanford University Net	[JCM]

Network Numbers

D	128.013.rrr.rrr	MATNET	Mobile Access Terminal Net	[DM11]
R	128.014.rrr.rrr	BBN-SAT-TEST	BBN SATNET Test Net	[DM11]
R	128.015.rrr.rrr	S1NET	LLL-S1-NET	[EAK1]
R	128.016.rrr.rrr	UCLNET	University College London	[PK]
	128.017.rrr.rrr		Unassigned	[JBP]
	128.018.rrr.rrr		Unassigned	[JBP]
	128.019.rrr.rrr		Unassigned	[JBP]
	128.020.rrr.rrr		Unassigned	[JBP]
R	128.021.rrr.rrr	SF-PR-1	SF-1 Packet Radio Network	[JEM]
R	128.022.rrr.rrr	SF-PR-2	SF-2 Packet Radio Network	[JEM]
R	128.023.rrr.rrr	BBN-PR	BBN Packet Radio Network	[JAW3]
R	128.024.rrr.rrr	ROCKWELL-PR	Rockwell Packet Radio Net	[EHP]
D	128.025.rrr.rrr	BRAGG-PR	Ft. Bragg Packet Radio Net	[JEM]
D	128.026.rrr.rrr	SAC-PR	SAC Packet Radio Network	[BG5]
D	128.027.rrr.rrr	DEMO-PR-1	Demo-1 Packet Radio Network	[LCS]
D	128.028.rrr.rrr	C3-PR	Testbed Development PR NET	[BG5]
	128.029.rrr.rrr-191.254.rrr.rrr		Unassigned	[JBP]
	191.255.rrr.rrr		Reserved	[JBP]

Class C Networks

*	Internet Address	Name	Network	References
	192.000.000.rrr		Reserved	[JBP]
R	192.000.001.rrr	BBN-TEST-C	BBN-GATE-TEST-C	[RH6]
	192.000.002.rrr-192.000.255.rrr		Unassigned	[JBP]
R	192.001.xxx.rrr-192.004.xxx.rrr		BBN local networks	[SGC]
R	192.005.001.rrr	CISLNET	CISL Multics Network	[CH2]
R	192.005.002.rrr	WISC	Univ of Wisconsin Madison	[RS23]
C	192.005.003.rrr	HP-DESIGN-AIDS	HP Design Aids	[NXK]
C	192.005.004.rrr	HP-TCG-UNIX	Hewlett Packard TCG Unix	[NXK]
D	192.005.005.rrr	BRLNET	BRLNET	[1,MJM2]
D	192.005.006.rrr	MINET	MINET	[1,DHH]
R	192.005.007.rrr	CIT-CS-NET	Caltech-CS-Net	[65,DSW]
R	192.005.008.rrr	WASHINGTON	University of Washington	[JAR4]
R	192.005.009.rrr	AERONET	Aerospace Labnet	[9,LCN]
R	192.005.010.rrr	ECLNET	USC-ECL-CAMPUS-NET	[MXB]
R	192.005.011.rrr	CSS-RING	SEISMIC-RESEARCH-NET	[RR2]
R	192.005.012.rrr	UTAH-NET	UTAH-COMPUTER-SCIENCE-NET	[RF1]
	192.005.013.rrr		Unassigned	[JBP]
	192.005.014.rrr		Unassigned	[JBP]
	192.005.015.rrr		Unassigned	[JBP]
	192.005.016.rrr		Unassigned	[JBP]
	192.005.017.rrr		Unassigned	[JBP]
	192.005.018.rrr		Unassigned	[JBP]
	192.005.019.rrr		Unassigned	[JBP]
	192.005.020.rrr		Unassigned	[JBP]
D	192.005.021.rrr	BRLNET1	BRLNET1	[1,MJM2]

Network Numbers

D	192.005.022.rrr	BRLNET2	BRLNET2	[1,MJM2]
D	192.005.022.rrr	BRLNET3	BRLNET3	[1,MJM2]
D	192.005.022.rrr	BRLNET4	BRLNET4	[1,MJM2]
D	192.005.022.rrr	BRLNET5	BRLNET54	[1,MJM2]
	192.005.026.rrr-223.255.254.rrr		Unassigned	[JBP]
	223.255.255.rrr		Reserved	[JBP]

Other Reserved Internet Addresses

Internet Address	Name	Network	References
224.000.000.000-255.255.255.255		Reserved	[JBP]

Network Totals

Assigned

Class	A	B	C	Total
Research	26	19	1033	1078
Defense	4	5	7	16
Commercial	1	0	2	3
Total	31	24	1042	1097

Maximum Allowed

Class	A	B	C	Total
Research	8	1024	65536	66568
Defense	24	3072	458752	461848
Commercial	94	12286	1572862	1585242
Total	126	16382	2097150	2113658

ASSIGNED INTERNET VERSION NUMBERS

In the Internet Protocol (IP) [33,62] there is a field to identify the version of the internetwork general protocol. This field is 4 bits in size.

Assigned Internet Version Numbers

Decimal	Octal	Version	References
0	0	Reserved	[JBP]
1-3	1-3	Unassigned	[JBP]
4	4	Internet Protocol	[33,62,JBP]
5	5	ST Datagram Mode	[20,JWF]
6-14	6-16	Unassigned	[JBP]
15	17	Reserved	[JBP]

ASSIGNED INTERNET PROTOCOL NUMBERS

In the Internet Protocol (IP) [33,62] there is a field, called Protocol, to identify the the next level protocol. This is an 8 bit field.

Assigned Internet Protocol Numbers

Decimal	Octal	Protocol	References
0	0	Reserved	[JBP]
1	1	ICMP	[53,62,JBP]
2	2	Unassigned	[JBP]
3	3	Gateway-to-Gateway	[48,49,JFH2]
4	4	CMCC Gateway Monitoring Message	[18,19,MB]
5	5	Stream (ST)	[20,JWF]
6	6	Transmission Control (TCP)	[34,62,JBP]
7	7	UCL	[PK]
8	10	Exterior Gateway Protocol (EGP)	[66,RH6]
9	11	Unassigned	[JBP]
10	12	BBN RCC Monitoring	[SGC]
11	13	NVP	[12,SC3]
12	14	PUP	[4,EAT3]
13-14	15-16	Unassigned	[JBP]
15	17	Cross Net Debugger (XNET)	[25,JFH2]
16	20	Chaos Stream	[NC3]
17	21	User Datagram (UDP)	[42,62,JBP]
18	22	Multiplexing	[13,JBP]
19	23	DCN Measurement Subsystems	[DLM1]
20	24	Host Monitoring (HMP)	[55,RH6]
21	25	Packet Radio Measurement	[ZSU]

22	26	XEROX NS IP	[59,JBP]
23	27	Trunk-1	[BML]
24	30	Trunk-2	[BML]
25-60	31-74	Unassigned	[JBP]
61	75	any host internal protocol	[JBP]
62	76	CFTP	[60,HCF2]
63	77	any local network	[JBP]
64	100	SATNET and Backroom EXPAK	[DM11]
65	101	MIT Subnet Support	[NC3]
66	102	MIT VAX Remote Disk Protocol	[MBG]
67	103	Internet Pluribus Packet Core	[DM11]
68	104	Unassigned	[JBP]
69	105	SATNET Monitoring	[DM11]
70	106	Unassigned	[JBP]
71	107	Internet Packet Core Utility	[DM11]
72-75	110-113	Unassigned	[JBP]
76	114	Backroom SATNET Monitoring	[DM11]
77	115	Unassigned	[JBP]
78	116	WIDEBAND Monitoring	[DM11]
79	117	WIDEBAND EXPAK	[DM11]
80-254	120-376	Unassigned	[JBP]
255	377	Reserved	[JBP]

ASSIGNED PORT NUMBERS

Ports are used in the TCP [34,62] to name the ends of logical connections which carry long term conversations. For the purpose of providing services to unknown callers a service contact port is defined. This list specifies the port used by the server process as its contact port. The contact port is sometimes called the "well-known port".

To the extent possible these same port assignments are used with UDP [42,62].

The assigned ports use a small portion of the possible port numbers. The assigned ports have all except the low order eight bits cleared to zero. The low order eight bits are specified here.

Port Assignments:

Decimal	Octal	Description	References
1	1	Old Telnet	[40,JBP]
3	3	Old File Transfer	[27,11,24,JBP]
5	5	Remote Job Entry	[6,17,JBP]
7	7	Echo	[35,JBP]
9	11	Discard	[32,JBP]
11	13	Who is on or SYSTAT	[JBP]
13	15	Date and Time	[JBP]
15	17	Who is up or NETSTAT	[JBP]
17	21	Short Text Message	[JBP]
19	23	Character generator or TTYTST	[31,JBP]
20	24	File Transfer (Default Data)	[36,62,JBP]
21	25	File Transfer (Control)	[36,62,JBP]
23	27	Telnet	[41,62,JBP]
25	31	SMTP	[54,62,JBP]
27	33	NSW User System FE	[14,RHT]
29	35	MSG ICP	[29,RHT]
31	37	MSG Authentication	[29,RHT]
33	41	Unassigned	[JBP]
35	43	IO Station Spooler	[JBP]
37	45	Time Server	[22,JBP]
39	47	Unassigned	[JBP]
41	51	Graphics	[46,17,JBP]
42	52	Name Server	[38,62,JBP]
43	53	WhoIs	[57,62,JAKE]
45	55	Message Processing Module (receive)	[37,JBP]
46	56	MPM (default send)	[37,JBP]
47	57	NI FTP	[50,SK]
49-53	61-65	Unassigned	[JBP]

55	67	ISI Graphics Language	[3,RB6]
57	71	Unassigned	[JBP]
59	73	Augment File Mover	[WWB]
61	75	NIMAIL	[56,SK]
63	77	Unassigned	[JBP]
65	101	Unassigned	[JBP]
67	103	Datacomputer at CCA	[8,JZS]
69	105	Trivial File Transfer	[47,62,KRS]
71	107	NETRJS	[5,17,RTB]
72	110	NETRJS	[5,17,RTB]
73	111	NETRJS	[5,17,RTB]
74	112	NETRJS	[5,17,RTB]
75	113	Unassigned	[JBP]
77	115	any private RJE server	[JBP]
79	117	Name or Finger	[23,17,KLH]
81	121	HOSTS2 Name Server	[EAK1]
83	123	MIT ML Device	[DPR]
85	125	MIT ML Device	[DPR]
87	127	any terminal link	[JBP]
89	131	SU/MIT Telnet Gateway	[MRC]
91	133	MIT Dover Spooler	[EBM]
93	135	Device Control Protocol	[DCT]
95	137	SUPDUP	[15,MRC]
97	141	Datacomputer Status	[8,JZS]
99	143	Metagram Relay	[GEOF]
101	145	NIC Host Name Server	[64,62,JAKE]
103	147	CSNET Mailbox Name Server (Telnet)	[58,MHS1]
105	151	CSNET Mailbox Name Server (Program)	[58,MHS1]
107	153	Remote Telnet Service	[61,JBP]
109-129	155-201	Unassigned	[JBP]
131	203	Datacomputer	[8,JZS]
132-223	204-337	Reserved	[JBP]
224-241	340-361	Unassigned	[JBP]
243	363	Survey Measurement	[2,AV]
245	365	LINK	[7,RDB2]
247-255	367-377	Unassigned	[JBP]

ASSIGNED AUTONOMOUS SYSTEM NUMBERS

The Exterior Gateway Protocol (EGP) [66] specifies that groups of gateways may for autonomous systems. The EGP provides a 16-bit field for identifying such systems. The values of this field are registered here.

Autonomous System Numbers:

Decimal	Description	References
0	Reserved	[JBP]
1	The BBN Gateways	[JBP]
2-65534	Unassigned	[JBP]
65535	Reserved	[JBP]

ASSIGNED ARPANET LINK NUMBERS

The word "link" here refers to a field in the original ARPANET Host/IMP interface leader. The link was originally defined as an 8 bit field. Some time after the ARPANET Host-to-Host (AHHP) protocol was defined and, by now some years ago, the definition of this field was changed to "Message-ID" and the length to 12 bits. The name link now refers to the high order 8 bits of this 12 bit message-id field. The low order 4 bits of the message-id field are to be zero unless specifically specified otherwise for the particular protocol used on that link. The Host/IMP interface is defined in BBN report 1822 [1].

Link Assignments:

Decimal	Octal	Description	References
0	0	AHHP Control Messages	[28,17,JBP]
1	1	Reserved	[JBP]
2-71	2-107	AHHP Regular Messages	[28,17,JBP]
72-149	110-225	Reserved	[JBP]
150	226	Xerox NS IP	[59,LLG]
151	227	Unassigned	[JBP]
152	230	PARC Universal Protocol	[4,EAT3]
153	231	TIP Status Reporting	[JGH]
154	232	TIP Accounting	[JGH]
155	233	Internet Protocol (regular)	[33,62,JBP]
156-158	234-236	Internet Protocol (experimental)	[33,62,JBP]
159-195	237-303	Unassigned	[JBP]
196-255	304-377	Experimental Protocols	[JBP]
248-255	370-377	Network Maintenance	[JGH]

ETHERNET NUMBERS OF INTEREST

Many of the networks of all classes are Ethernets (10Mb) or Experimental Ethernets (3Mb). These systems use a message "type" field in much the same way the ARPANET uses the "link" field.

Assignments:

Ethernet		Exp. Ethernet		Description	References
decimal	Hex	decimal	octal		
512	02,00	512	1000	XEROX PUP	[4,EAT3]
1536	06,00	1536	3000	XEROX NS IDP	[59,LLG]
2048	08,00	513	1001	DOD IP	[33,62,JBP]
2054	08,06	-	-	Address Res	[67,DCP1]

ASSIGNED PUBLIC DATA NETWORK NUMBERS

One of the Internet Class A Networks is the international system of Public Data Networks. This section lists the mapping between the Internet Addresses and the Public Data Network Addresses.

Assignments:

Internet	Public Data Net	Description	References
014.000.000.000		Reserved	[JBP]
014.000.000.001	311031700035 00	PURDUE-TN	[CXK]
014.000.000.002	311060800027 00	UWISC-TN	[CXK]
014.000.000.003	311030200024 00	UDEL-TN	[CXK]
014.000.000.004	234219200149 23	UCL-VTEST	[PK]
014.000.000.005	234219200300 23	UCL-TG	[PK]
014.000.000.006	234219200300 25	UK-SATNET	[PK]
014.000.000.007-014.255.255.254		Unassigned	[JBP]
014.255.255.255		Reserved	[JBP]

DOCUMENTS

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APPENDIX A

This appendix summarizes the agreements reached by the DDN/PMO and DARPA at a September 1982 meeting concerning the allocation and assignment of the various numbers associated with DoD Protocol Standards and the DARPA Experimental Standards.

Recommended policy is summarized for each type of number assignment of concern:

Network Identifiers used by the Internet Protocol

It is recommended that the available number spaces for class A, B, and C network addresses be allocated among R&D, DoD and commercial uses, and that assignments of these addresses be the responsibility respectively of DARPA, DCA PCCO/DDN and the National Bureau of Standards. The recommended allocations are given below.

Class A

R&D allocation:	8 nets	assigned by: ARPA
DoD allocation:	24 nets	assigned by: TBD
Commercial allocation:	94 nets	assigned by: TBD
Reserved Addresses:	0,127	

Class B

R&D allocation:	1024 nets	assigned by: ARPA
DoD allocation:	3072 nets	assigned by: TBD
Commercial allocation:	12286 nets	assigned by: TBD
Reserved Addresses:	0,16383	

Class C

R&D allocation:	65536 nets	assigned by: ARPA
DoD allocation:	458725 nets	assigned by: TBD
Commercial allocation:	1572862 nets	assigned by: TBD
Reserved Addresses:	0,2097151	

Class D

All addresses in this class are reserved for future use, possibly in support of multicast services. They should be allocated to R&D use for the present.

Within the R&D community, it will be the policy that network identifiers will only be granted to applicants who show evidence that they are acquiring standard Bolt Beranek and Newman gateway software or have implemented or are acquiring a gateway meeting the External Gateway Protocol requirements. Acquisition of the Berkeley BSD 4.2 UNIX software might be considered evidence of the latter.

Experimental networks which later become operational need not be renumbered if that would cause hardships. Rather, the identifiers could be moved from R&D to DoD or Commercial status. Thus, network identifiers may change state among R&D, DoD and commercial, but the number of identifiers allocated to each use should remain constant. To make possible this fluid assignment, it is recommended that the network identifier spaces not be allocated by simple partition but rather by specific assignment. It is recommended that DDN/PMO or its designee keep track of the assignments made by DARPA, DDN and NBS to ensure that allocation remains as suggested.

Protocol Identifiers

In general, all assignments will be made by the R&D community, but any numbers which become R&D, DoD, national or international standards will be marked as such in this RFC.

Protocol identifiers 0 and 255 are reserved.

95 protocol identifiers are allocated for assignment to DoD standards, 32 for R&D use, and 127 for Commercial, national or international standards.

Port Numbers

A recommendation for allocation and assignment of port numbers is to be developed jointly by representatives of the ICCB and PSTP.

ARPANET Link Numbers

All unnecessary link number usage will be eliminated by joint effort of the ICCB, PSTP and BBN. BBN will give consideration to the use of link numbers to promote interoperability among various ARPANET interfaces and report to the ICCB, PSTP and DDN/PMO. Examples of possible interoperability issues are:

(i) interoperability of 1822 and X.25 interfaces

(ii) interoperability of SIP and other interfaces

(iii) logical addressing or other special services

IP Version Numbers

These numbers will be assigned only by the R&D community for the purpose of exploring alternatives in internet protocol service expansion, such as inclusion of stream protocol (ST) services.

TCP, IP and Telnet Option Identifiers

These numbers will be assigned by the R&D community. Any permanent or experimental assignments will be identified in the documents specifying those protcols.

Implementation:

This policy recommendation has not been fully implemented as yet. Currently Jon Postel is acting coordinator for all number assignments.